

1        WE CLAIM:

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3        1. A process for preparing styrene comprising:  
4           catalytically dehydrating 1-phenylethanol in the  
5           liquid phase  
6           wherein the process is performed in the presence  
7           of at least 0.1 %wt of a chain transfer agent.

1        2. The process of claim 1 in which the chain  
2           transfer agent is selected from the group consisting  
3           of phenol, methylphenol, ethylphenol, benzylalcohol  
4           and benzoic acid.

1        3. The process of claim 1 in which the process is  
2           performed in the presence of an acidic catalyst.

1        4. The process of claim 3 in which the catalyst is  
2           an aliphatic or aromatic sulfonic acid.

1        5. The process of claim 1 in which the process is  
2           performed at 150°C to 350°C.

1        6. A process for preparing styrene comprising:  
2           a) catalytically dehydrating a feed comprising 1-  
3           phenylethanol in the liquid phase in a reactor to  
4           obtain a product stream comprising chain transfer  
5           agent; and,  
6           b) recycling at least part of the chain transfer  
7           agent-containing product stream to the reactor to be  
8           combined with the feed.

1        7. A process for preparing styrene comprising:  
2           (i)        contacting propene and ethylbenzene  
3           hydroperoxide in the presence of a heterogeneous  
4           catalyst to obtain propylene oxide and 1-  
5           phenylethanol;  
6           (ii)       separating 1-phenylethanol from the reaction  
7           mixture obtained in step (i); and,  
8           (iii)       introducing the 1-phenylethanol obtained in  
9           step (ii) into a process for preparing styrene

10 comprising catalytically dehydrating 1-phenylethanol  
11 in the liquid phase wherein the process is performed  
12 in the presence of at least 0.1 %wt of a chain  
13 transfer agent.